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EXAMINER	
SHAH, PARAS D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/647,611	BUSAYAPONGCHAI, SENIS
	Examiner	Art Unit
	Paras Shah	2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 14 August 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 and 20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 and 20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. . This Office Action is in response to the RCE and Amendment filed on 08/14/2007. Claims 1-15, and 20 remain pending and have been examined.

2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Response to Arguments

3. Applicant's arguments, see pages 8-11, filed 08/14/2007, with respect to the rejection(s) of claim(s) 1-15 and 20 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Brotman *et al.* (US 5,917,889).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* (US 5,917,890), hereinafter Brotman *et al.* (890) in view of Meador *et al.* (US 5,638,425) in view of Brotman *et al.* (US 5,917,889), hereinafter Brotman *et al.* (889).

As to claim 1, Brotman *et al.*(890) teaches a method for

receiving a first spoken alphabetic character input from a user (see Figure 2, element 110);

passing the first spoken alphabetic character input received from the user through a speech recognition engine (see Figure 1, element 940 and col. 3, line 33-35) (e.g. It should be noted that it is inherent that the speech recognition as mentioned by the reference will recognize the utterance in order to understand the input, which will enable the same behavior as that by the applicant);

at the speech recognition engine, recognizing the first spoken alphabetic character input (Col. 3, line 47-48) received from the user;

querying the user for verification that the recognized alphabetic character input is the same (Col. 3, line 47-49) as the first spoken alphabetic character input (e.g. It should be noted that it is inherent that user verification is needed for the process of the next character input to continue as mentioned by the reference);

if the recognized alphabetic character input is not the same as the first spoken alphabetic character input received from the user (see col. 3, line 51-52), receiving from the user a dual tome multi-frequency (DTMF) key tone for each of one or more first spoken alphabetic characters received from the user (see col. 3, line 52-55);

if one alphabetic character string associated with the DTMF key tones received from the user matches the first spoken alphabetic character input

received from the user matches the first spoken alphabetic character input received from the user, designating the one alphabetic character string associated with the DTMF key tones (see col. 3, line 54) received from the user that matches the first spoken alphabetic character input received from the user as a correct alphabetic character input (see col. 3, lines 55-57).

prior to receiving from the user a DTMF key tone for each of the one or more spoken characters input by the user as a correct alphabetic character input requested from the user: determining whether an alphabetic character string associated with the DTMF tones (see col. 5, lines 5-7) received from the user sounds like the first spoken alphabetic character input (see Col. 5, lines 20-23); and querying the user to determine whether the alphabetic character string associated with the DTMF key tones (see col. 5, line 40 and lines 41-43) received from the user match the first spoken alphabetic character input received from the user.

if more than one alphabetic character string is determined to be associated with the DTMF key tones (see col. 5, lines 5-7) received from the user that sound like the first spoken alphabetic character input received from the user (see col. 4, lines 14-15),

comparing the second alphabetic character input received from the user to each of the more than one alphabetic character strings determined to be associated with the DTMF key tones (see col. 5, lines 59-61) received from the

user that sounds like the first spoken alphabetic character input (see col. 5, line 57) received from the user; and

if the second alphabetic character input received from the user matches one of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user (see col. 5, line 59), designating the alphabetic character string associated with the DTMF key tones that matches the second alphabetic input received from the user as a correct alphabetic character (see col. 5, line 60-62 and line 45 and Figure 3 elements 220, 260, 270, and 120).

However, Brotman *et al.* (890) does not specifically teach the input of comprising plural alphabetic characters.

The cited Meador *et al.* reference is in the same field of endeavor as the Brotman *et al.* (890) reference since it is directed towards directory assistance. Meador *et al.* teaches inputting a plurality of input characters from a user and performing verification for the correct input characters (see col. 3, lines 40-45 and col. col. 4, lines 21-41) (e.g. In this cited section, the user is inputting a location name. The name is compared to the set of phoneme strings (e.g. which can be characters) and if the probability is not over a threshold the spell out the location.

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have combined the improving alphabetic speech recognition as taught by Brotman *et al.* (890) with the inclusion of words as input consisting of characters as taught by Meador *et al.* The motivation to have

combined the two references involve the savings in time with regard to locating the user's request without error (see Meador *et al.*, col. 4, lines 50-65) as would benefit the teachings of Brotman *et al.* (890), where the input is character by character.

However, Brotman *et al.* (890) in view of Meador *et al.* do not specifically teach the request of additional input in order to determine the correct character.

Brotman *et al.* (889) does teach receiving a spoken input (see col. 6, line 60-61) of the alphabetic character input from the user (see col. 4, lines 16-22); comparing the spoken alphabetic character input received from the user to each of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user (see col. 5, lines 1-24); and if the spoken alphabetic character input received from the user matches one of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user , designating the alphabetic character string associated with the DTMF key tones that matches the spoken alphabetic input received from the user as a correct alphabetic character (see col. 5, lines 8-24) .

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have combined the improving alphabetic speech recognition as taught by Brotman *et al.*(890) in view of Meador *et al.* with the inclusion of a second input of an uttered character as taught by Brotman *et al.* (889). The motivation to have combined the two references involves the further

disambiguation of the DTMF string by the use of uttered characters in order to determine the correct character (see Brotman *et al.* (889), col. 5, lines 8-17). Hence, the ability to speak the utterance the second time would be obvious for the purposes of disambiguating from the set of allowable characters.

As to claim 15, Brotman *et al.*(890), Meador *et al.*, and Brotman *et al.* (899) teach all of the limitations as in claim 1.

Furthermore, Brotman *et al.* (890) teaches a method prior to receiving from the user a DTMF key tone for each of the one or more spoken characters input by the user:

prompting the user for a DTMF key tone (see col. 4, line 57) for each of the one or more spoken alphabetic characters input by the user (see col. 4, line 58); and

querying the user to verify that the DTMF key tone received from the user are correct (see col. 5, line 40 and lines 41-43).

8. Claims 2-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) as applied to claim 1 above, and further in view of Hartley *et al.* (US 6,910,012).

As to claim 2, Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) teach the improvement of alphabetic speech recognition as in claim 1.

However, Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) do not specifically teach the use a grammar definition defining a set of alphabetic characters acceptable to speech recognition engine.

Hartley *et al.* teaches the use of grammars (see col. 6, line 18) to define a set of alphabetic characters (see col. 6, line 26) to the speech recognition engine.

It would have been obvious to one of ordinary skilled in the art to have modified the speech recognition engine shown by Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) by a grammar as shown by Hartley *et al.*. The motivation to combine the two references would be to increase the matching of the spoken utterance (see Hartley *et al.*, col. 2, line 32-33) and limit the number of characters by the speech recognition system.

As to claims 3 and 4, Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) teach all of the limitations as in claims 1 and 2.

Furthermore, Brotman *et al.* (890) teaches a system that uses alphabetic (see abstract) letters for input by user (see Figure 2, element 110) in a speech recognition engine. (e.g. It should be noted that the reference does not specifically state the letters of the alphabet, the reference incorporates the English alphabet as input to the speech recognizer. It would be obvious to include the letters a-z in the alphabet).

As to claims 5-7, Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) in view of Hartley *et al.* teach all of the limitations as in claims 1-4.

Furthermore, Hartley *et al.* teaches the inclusion of phonetic versions of alphabetic characters in the grammar (see col. 2, lines 21-24). It should be noted that these letters are included along with the original alphabet (see col. 6, lines 18-21 and col. 4, lines 22-28).

As to claims 8-10 Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) in view of Hartley *et al.* teach all of the limitations as in claims 1 and 2.

Furthermore, Brotman *et al.* (890) teaches a method whereby the alphabetic character input received involves the use of DTMF key tones (see col. 5, line 5), which include numbers (see col. 5, line 6). It is inherent for a telephone keypad to include numbers 1-9.

As to claim 11, Brotman *et al* .(890) in view of Meador *et al.* in view of Brotman *et al.* (889) in view of Hartley *et al.* teach all of the limitations as in claims 1, 2, and 8-10.

Furthermore, Hartley teaches including a set of all alphabetic characters in a grammar (see col. 6, line 18). However, Hartley *et al.* does not specifically teach the use of DTMF key tones. Brotman *et al.* (890) teaches the use of DTMF key tones and the characters associated with the DTMF keys. This could be included in the grammar file to be recognized by the speech recognition unit. The

motivation to include the DTMF signals in the grammar is for disambiguation (see col. 3, line 53-54).

As to claim 12, Brotman *et al* .(890) in view of Meador *et al.* in view of Brotman *et al.* (889) in view of Hartley *et al.* teach all of the limitations as in claims 1.

Furthermore, Hartley *et al.* teaches a method converting the alphabetic character input from digital to audio format (see col. 5, line 44-50) (e.g. it should be noted that the digitized signal from the speech recognition engine is transformed into an analog signal for future voice recognition stages (voice applications).

As to claim 13, Brotman *et al.* (890) in view of Meador *et al.* in view of Brotman *et al.* (889) in view of Hartley *et al.* teach all of the limitations as in claims 1 and 12.

Furthermore, Brotman *et al.* (890) teaches the verification of the character input is the same as that of the spoken character (see Figure 2, elements 140 and 150).

As to claim 14, Brotman *et al* .(890) in view of Meador *et al.* in view of Brotman *et al.* (889) in view of Hartley *et al.* teach all of the limitations as in claims 1, 12, and 13.

Furthermore, Brotman *et al.* (890) teaches the use of a telephone for the presentation of the recognized character (see col. 2, line 33 and col. 3, line 6-8) (e.g. It is inherent that a telephone includes such signals as voice and DTMF key signal. Further, the reference uses the telephone as the communication mode).

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* (890) in view of Meador *et al.* (US 5,638,425) and further in view of Hartley *et al. and* in view of Brotman *et al.* (899).

As to claim 20, Brotman *et al.* (890) teaches a system for alphabetic speech recognition comprising:

a speech recognition engine (see Figure 1, element 940 and col. 3, line 33-35) (e.g. It should be noted that it is inherent that the speech recognition as mentioned by the reference will recognize the utterance in order to understand the input, which will enable the same behavior as that by the applicant);

receive a first spoken alphabetic character from a user (see Figure 2, element 110);

query the user for verification that the recognized alphabetic character input is same as the spoken alphabetic character (see col. 3, line 47-49);

receive from the user a DTMF key tone for each spoken alphabetic character input from user if recognized character is not the same (see col. 4, lines 52-55 and Col. 5, lines 5-28);

designating an alphabetic character associated with the DTMF key tone that matches the alphabetic character input from user (see col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character. Once one has been eliminated the next stored signal is compared).

if more than one alphabetic character string is determined to be associated with the DTMF key tones (see col. 5, lines 5-7) received from the user that sound like the first spoken alphabetic character input received from the user (see col. 4, lines 14-15),

comparing the second alphabetic character input received from the user to each of the more than one alphabetic character strings determined to be associated with the DTMF key tones (see col. 5, lines 59-61) received from the user that sounds like the first spoken alphabetic character input (see col. 5, line 57) received from the user; and

if the second alphabetic character input received from the user matches one of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user (see col. 5, line 59), designating the alphabetic character string associated with the DTMF key tones that matches the second alphabetic input received from the user as a correct alphabetic character (see col. 5, line 60-62 and line 45 and Figure 3 elements 220, 260, 270, and 120).

However, Brotman *et al.* (890) does not specifically teach the conversion of the character input from audio to digital format and the input of plural spoken alphabetic characters.

Meador *et al.* teaches inputting a plurality of input characters from a user and performing verification for the correct input characters (see col. 3, lines 40-45 and col. col. 4, lines 21-41).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have combined the improving alphabetic speech recognition as taught by Brotman *et al.* (890) with the inclusion of words as input consisting of characters as taught by Meador *et al.* The motivation to have combined the two references involve the savings in time with regard to locating the user's request without error (see Meador *et al.*, col. 4, lines 50-65) as would benefit the teachings of Brotman *et al.* (890), where the input is character by character.

Hartley *et al.* does teach a method of digitizing the spoken utterance for input into the speech recognition engine (see col. 6, line 60-61).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have combined the improving alphabetic speech recognition as taught by Brotman *et al.* (890) in view of Meador *et al.* with the inclusion of the audio to digital converter when presenting the signal to a speech recognition device as taught by Hartley *et al.* The motivation to modify the

speech recognition system with the digitizer shown by Hartley *et al.* is for analysis by speech recognition system (see Hartley *et al.,* col. 1, line 26).

However, Brotman *et al.* (890) in view of Meador *et al.* in view of Hartley *et al.* do not specifically disclose the request of additional input in order to determine the correct character.

Brotman *et al.* (899) does teach receiving a spoken input (see col. 6, line 60-61) of the alphabetic character input from the user (see col. 4, lines 16-22); comparing the spoken alphabetic character input received from the user to each of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user (see col. 5, lines 1-24); and if the spoken alphabetic character input received from the user matches one of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user , designating the alphabetic character string associated with the DTMF key tones that matches the spoken alphabetic input received from the user as a correct alphabetic character (see col. 5, lines 8-24) .

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have combined the improving alphabetic speech recognition as taught by Brotman *et al.* (890) in view of Meador *et al.* in view of Hartley *et al.* with the inclusion of a second input of an uttered character after dtmf input as taught by Brotman *et al.* (899). The motivation to have combined the two references involves the further disambiguation of the DTMF string by the

use of uttered characters in order to determine the correct character (see Brotman *et al.* (899), col. 5, lines 8-17). Hence, the ability to speak the utterance the second time would be obvious for the purposes of disambiguating from the set of allowable characters.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paras Shah whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-THURS. 7:30a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

P.S.

08/27/2007

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